

Title (en)

Trench isolation planarization using a hard mask.

Title (de)

Planarization eines Isolationsgrabens mittels einer harten Maske.

Title (fr)

Planarisation d'une ramure d'isolation utilisant un masque dur.

Publication

EP 0597603 A2 19940518 (EN)

Application

EP 93308495 A 19931025

Priority

US 97587192 A 19921113

Abstract (en)

An improved process for planarizing an isolation trench in the fabrication of a semiconductor chip involves replacing the photoresist material used for planarization with a hard mask film. The hard mask material must be able to gap fill ("planarize") narrow trenches which do not receive a planarization block mask (or "filler mask") to protect them during the subsequent hard mask film etch. The hard mask film is typically conformal over large features and thus will not be susceptible to pattern density effects. Using the hard mask material, all active areas/trenches appear the same after planarization, independent of pattern density. Further, the hard mask material may subsequently be polished so that there are no peaks or spikes and no depressions. <IMAGE>

IPC 1-7

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IPC 8 full level

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CPC (source: EP)

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Cited by

US5830773A; US6030900A; EP0637065A3; US5494857A; WO9739479A1; WO9706556A1

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